

Atty. Dkt. No. EPI3004B  
(formerly 310098.401C1)

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44. (New) The composition of claim 43, wherein said targeting molecule is covalently linked via at least one cysteine residue of the targeting molecule.

45. (New) The composition of claim 43, wherein said targeting molecule is covalently linked via a peptide bond.

46. (New) The composition of claim 43 wherein said targeting molecule is linked to said at least one a biological agent via a phosphodiester bond.

47. (New) The composition of claim 42 wherein said targeting molecule is noncovalently linked to said at least one biological agent.

48. (New) The composition of claim 42 wherein said targeting molecule comprises amino acid sequence from SEQ ID NOS: 114, 115, 116, 117, 118, or 119.

49. (New) The composition of claim 42 wherein said targeting molecule comprises the amino acid sequence encoded by nucleotides 1-414 of SEQ ID NO:7.

50. (New) The composition of claim 42 wherein said targeting molecule comprises the amino acid sequence encoded by nucleotides 1-213 of SEQ ID NO:8.

51. (New) The composition of claim 42 wherein said targeting molecule comprises the amino acid sequence encoded by nucleotides 1-282 of SEQ ID NO:13.

52. (New) The composition of claim 42 wherein said targeting molecule contains at least four peptide domains having  $\beta$ -sheet character, separated by domains lacking  $\beta$ -sheet character.

53. (New) The composition of claim 49 wherein said targeting molecule comprises amino acid sequence from SEQ ID NOS:120, 121,122,123, or 124.

54. (New) The composition of claim 42 wherein said targeting molecule further comprises a linear N-terminal domain.

55. (New) The composition of claim 54 wherein said N-terminal domain comprises amino acid sequence from SEQ ID NOS:125, 126, 127, 128, or 129 or Asn Lys.

56. (New) The composition of claim 42 wherein said targeting molecule further comprises a C-terminal domain.

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57. (New) The composition of claim 56 wherein said C-terminal domain comprises a linear peptide having  $\beta$ -sheet character.

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58. (New) The composition of claim 57 wherein said linear peptide comprises an amino acid sequence from SEQ ID NOS: 130, 131, 132, 133, or 134.

59. (New) The composition of claim 56 wherein said C-terminal domain comprises a covalently closed loop.

60. (New) The composition of claim 59 wherein said covalently closed loop comprises an amino acid sequence from SEQ ID NOS: 135, 136, 137, 138, 139 or 140.

61. (New) The composition of claim 42, wherein said targeting molecule comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 1, 2, 3, 4, 5, and 6.

62. (New) The composition of claim 42, wherein said biological agent is selected from the group consisting of enzymes, antibodies, single chain antigen binding proteins, antigen combining sites, nucleic acids, carbohydrates and lipids.

63. (New) A pharmaceutical composition for delivery of a biological agent to a basolateral factor of an epithelial surface, comprising the composition of claim 42 and a pharmaceutically acceptable carrier.

64. (New) The composition of claim 42, wherein said targeting molecule is linked to at least one biological agent via a substrate for an intracellular or extracellular enzyme associated with or secreted from an epithelial barrier.

65. (New) The composition of claim 64, wherein said enzyme is selected from the group consisting of proteases, glycosidases, phospholipases, esterases, hydrolases, and nucleases.

66. (New) The composition of claim 42, wherein said targeting molecule is linked to at least one biological agent via an amino acid side chain in an antibody combining site.

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67. (New) The composition of claim 42, wherein said targeting molecule comprises an immunoglobulin heavy chain or portion thereof linked to said J-chain or portion thereof.

68. (New) The composition of claim 42, wherein said targeting molecule does not comprise an immunoglobulin light chain.

69. (New) The composition of claim 68, wherein said targeting molecule comprises an immunoglobulin heavy chain or portion thereof linked to said J-chain or portion thereof.

70. (New) The composition of claim 42, wherein said targeting molecule does not comprise an immunoglobulin heavy or light chain or portion thereof.

71. (New) The composition of claim 42, wherein said targeting molecule does not comprise full length dimeric IgA.

72. (New) The composition of claim 42, wherein said targeting molecule does not comprise full length IgM.

#### REMARKS

Reconsideration of the present application in view of the above amendments and the following remarks is respectfully requested. Claims 1-28, 30, 31, and 36-41 have been cancelled without prejudice following withdrawal from consideration by the examiner. Applicants expressly reserves the right to pursue such claims in continuation and/or divisional applications.

Applicants wish to point out that the present invention is based on the surprising discovery that molecules a  $\beta$  sheet and closed covalent loop structures such as a J chain and derivatives thereof, are capable of specifically binding to a factor preferentially distributed on an epithelial surface and, in some cases, causing internalization. New claims 42-72 are generally directed to a composition for delivery of a biological agent to a basolateral factor of an epithelial surface, the composition comprising a targeting molecule linked to at least one biological agent. Common to the claims is the requirement that the